



VISION 2N

AGRICULTURE



Instruction manual

EN

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Introduction

VISION 2N

— AGRICULTURE

... for the construction professional.

The rotation laser **THEIS VISION 2N AGRICULTURE** sets new standards in the area of fully automated professional lasers.

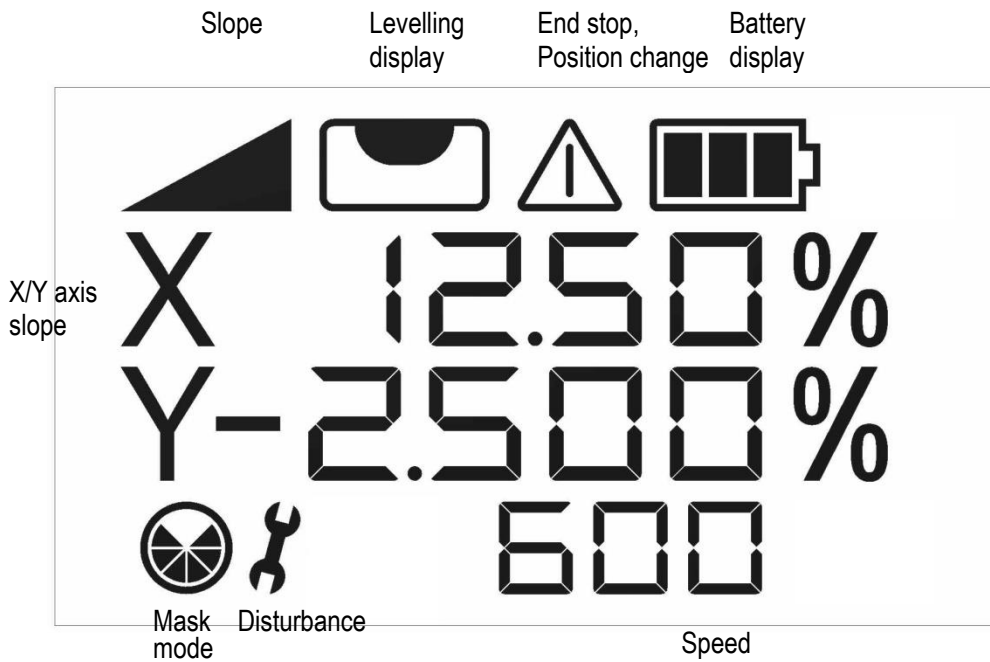
It is the result of many years of experience and innovative technology.

The high-quality construction laser is distinguished by its ruggedness and high precision – Made in Germany – and no construction site should do without it.

To ensure that your device is always ready for use, observe the following information:

1. **Never** store the device in the container when it is wet.
2. Check the precision every time before you use the equipment, since we can accept no liability for misalignment.
3. Observe the information on handling the battery.
4. Treat carefully the laser exit and sensor windows of the optional detector.

1. Keyboard /Display



Slope
X/Y axis

Counter clockwise
rotation step mode,
Selection of num-
bers and signs

Slope

Clockwise
rotation step mode,
Selection of
numbers and signs

On/Off

2. Horizontal Operation

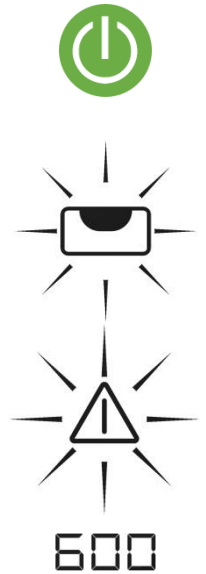
Align the tripod and screw the VISION tight using the tripod screw. The precision of alignment affects the size of the slope range. Use the On/Off switch to switch on the device.

The levelling indicator flashes on the lit display.

If the tripod head is sloping by more than 5°, this is indicated by the laser beam flashing quickly and the alarm symbol being displayed.

In this case, switch off the unit and align the tripod more carefully.

Once horizontal levelling is completed, the laser beam starts to rotate.



3. Rotation speed

The rotation speed can be regulated in four stages: 0, 300, 600 and 1000 RPM. Pressing the rotation key three times the laser stops (0 RPM). Each time you press the key again, the rotation speed increases.



At a standstill, you can move the laser dot using the counterclockwise/clockwise rotation keys. Pressing and holding down one of the keys speeds up the movement of the laser dot.



4. Slope

Alignment of the tripod head as to be as accurate as possible, to guarantee an easier targeting and to use the complete slope range of the laser of $\pm 15\%$ in both axes.

The AUTOSLOPE function monitors the slope and carries out adjustment automatically if necessary.

To do this, first align the laser exactly to the target point and then enter the slope settings as follows:



1st key press: Slope is activated. The stored slope settings of the last use are displayed and the automatically approached.



2nd key press: X, slope symbol and one digit flashes on the display.



Use the arrow keys to set the slope. The blinking digit can be changed.



To select the digits you must press the counterclockwise/clockwise rotation keys. For changing the sign use the ± button. Plus is not displayed.

When you press and hold the arrow - keys the values in the display will start to increase slowly and speed up than.



Pressing both arrow keys at the same time resets the respective display to 0.



3rd key press: Y flashes on the display. You can now use the arrow keys to set the slope of the Y axis in the same way as for the X axis.



4th key press: Confirms your input



After this, the device first starts levelling again, which is shown by the flashing levelling display. After this, the entered slope settings are approached.



During this procedure, the slope symbol blinks.



Once the values have been reached, the slope settings and the slope symbol are displayed permanently lit.



If external influences change the position of the device, the Autoslope monitoring system registers this and automatically initiates adjustment. If the device is tilted a relatively long way, the system interrupts rotation and the laser beam and the warning display flash rapidly.



If you press the slope key again, you can start grading again, the device carries out levelling again and approaches the stored slope settings again.



Important: The laser's mounting position and possibly also the elevation and direction may, however, have changed. This means that to be on the safe side you should switch the device off and back on again and adjust it.

5. Mask Mode

In mask mode, you can limit the laser exit to a settable range.

This is only possible with a rotating laser beam, i.e. not in scanning mode.

By pressing the key three times you enlarge the masked area up from 90 to 270°. With the 4th press you leave the mask mode. The switched-off area is displayed black. In the light area, the laser beam is still emitted.



Using the counterclockwise/clockwise rotation keys, you can rotate the mask area in the desired direction.



6. TILT Function

In the case of major changes to the mounting position (e.g. accidentally moving the tripod leg), a TILT function ensures that the device switches off and draws attention to the fact by the laser beam and the warning triangle flashing quickly.

After this, you must restart the device.

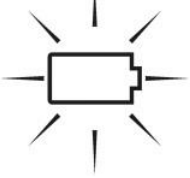
7. Setting of re-adjustment in levelling- and grade mode (Windy)

The laser has an integrated “Windy” function which extend the re-adjustment range to continue working due to wind, vibrations or slight shocks in levelling- and grade mode to.

8. Power Supply of Laser



The battery level indicator shows the battery status in four steps.



If the three bars on the display are blank and the outside frame flashes, the battery is flat and you must charge it. If you do not notice this, the device switches off automatically after a certain amount of time.



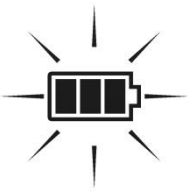
During charging the three bars flash from top to bottom. When the battery is fully charged, all the bars are shown.

Charge the battery at room temperature using only the THEIS standard mains unit connected to the charger socket below the laser. Charging at temperatures below +5°C can lead to defects in the battery.

Charging is also possible during operation. Overloading is not possible.

Only use the charger on dry premises!

The batteries that are used with Eneloop™ technology have the advantage of low levels of self-discharge. This means that if you do not use the device, you only need to recharge it every six months.



In the battery compartment, you can also use normal alkaline mono-cells. Under no circumstances must you recharge them. If you do this by mistake, the battery symbol flashes.

Important: Observe the correct polarity.

There are ± symbols on the base of the battery compartment. Observe the disposal information in point 18.

Important: Because the battery poles and contacts may soil over time, resulting in contact problems, regular inspection and possibly cleaning with a soft cloth and cleaning agent (spirit, alcohol) are necessary.

9. Radio Remote Control FB-V (Option)

The wireless remote control is designed on a bidirectional basis. All the information that is shown on the laser's display can also be seen on the lit-up display of the remote control. The key symbols on the operator panel correspond to the keys on the laser keypad.



Switch on the FB - V by pressing any key. The remote control automatically searches for an appropriate channel to rule out disturbances to other devices.

On the display, you can see the same information as on the display of the associated laser. If this is not the case and an antenna symbol is displayed, this may be due to one of the following reasons:

- The laser is not switched on
- The radio channel is not set correctly
- The remote control is out of range of the laser.

Pressing both arrow keys switches off the laser. The FB - V switches itself off after 1 minute.

If the Standby-/Sleep-function is activated to save the capacity of the battery (see capital 11), the laser can be set in standby-mode by pressing both arrow-buttons on the remote control. With any button on the remote control the standby-mode can be stopped. The instrument will return to normal operation, as if the instrument will be switched on. The maximum standby-period can be set at the

info-menu (see capital 11). The laser switches off if standby-period is exceeded.

Power is supplied by two alkaline micro AAA batteries. The service life is approximately 60 hours.

The battery symbol shows the status of the FB - V's batteries.

To change the batteries, open the cover on the back and replace the batteries. Observe the correct polarity. For information on disposal, see point 18.

10. Calibration Check

Set up the laser leveller as described in point 2 (but on an extremely well aligned tripod) and align it along a traverse length of approximately 30 metres – starting with the X axis, for example – and switch it on.

At the end of the traverse length, make a mark at the level of the laser beam. After this, rotate the laser unit by 180° and make another mark. Then do the same for the Y axis. If all the marks are on top of each other or are only slightly apart (maximum of 2 mm), adjustment is OK. If the marks are a long way apart, you must get a specialist firm to check the equipment and recalibrate it.

11. Menu

Information and settings



Switch on the laser



Press for five seconds

InFo INFO- display



e.g. 1.5 CPU (Program Version)

Sn. (Factory number, 6 digit)

h (Operating hours)



Next menu item

Fb CH9
EU

Automatic channel selection or set manually



Select channel CH 1 – 16. (AUTO: Reserved for auto-
automatic selection) Wireless off: OFF



Save and next menu item



% / ‰ - setting



% setting (% setting is default)
‰ - setting



Save and next menu item

dEF
rPM
600

Select start rotation speed



Select 0, 300, 600 or 1000 rpm



Save and next menu item

Lcdb
SEC. 20

Display of lighting timeout



Select 0 – 250 sec



Save and next menu item

Lcdb
Lich120

Display of lighting intensity



Select 0 - 250



Save and next menu item

SLP
hour
1

Standby-/Sleep-function set time
Deactivated at “0”-value



Choose 0...10 hours



Save

Information and settings FB – V



Press buttons
Serialnumber



Next menu item
Program Version




Next menu item

e.g. **CH5 EU**

Automatic channel selection or select manual.



Select channel 1 - 16 and confirm .
(Channel CH Auto is for automatic selection.)



Save and next menu item

e.g. **UbAt2.52**

Battery voltage FB - V



Next menu item

e.g. **APO
60 SEC**

Automatic shut off FB - V



Select 5 – 600 seconds (60 sec. is default)



Save and next menu item

e.g. **Lich140**

Display of lighting intensity



Select 0 – 250



Save and next menu item

e.g. **Lich
20 SEC**

Display of lighting time out



Select 0 – 600 sec.



Save

12. Delivery Contents

Standard

Laser
Rechargeable batteries
(4 Mono-cells)
Power supply unit
Instruction Manual
Protective case

Option

Radio remote control FB-V
Detector
Tripod

13. Special Indications and Troubleshooting

Displayed: 





Send the equipment for inspection only to an authorized service partner or directly to the manufacturer.

14. Warranty

We guarantee our products to be free from faults in material and workmanship according to the current state of the art. Should defects of this type arise in practical use, they will be eliminated free of charge. The warranty period is 36 months (apart from the rechargeable battery, which is 1 year) from the date of sale (date of invoice). You must return the device or its affected components for repair or replacement to THEIS immediately free of charge after you establish the defect.

No guarantee claim or claim free elimination of faults due to incorrect handling or storage can be accepted; in addition, no claims for damages can be accepted, including claims for damages in particular claims for indirect damages. Furthermore, any and all claims for damages will be void in the case of any technical intervention by third parties, i.e. not by THEIS.

15. Brief Instructions

| | |
|---|--|
| <p>Switch on/off Manual mode (press for 5 sec.)</p> |  |
| <p>Speed On/ Off 5 steps: 0 - 1000 Traversing the laser beam (step mode)</p> |  |
| <p>Slope Display of last input Input X Input Y Confirmation Change sign and digits</p> |  |
| <p>Mask mode Activation of 90 to 270°: Deactivation Positioning the mask area</p> |  |

16. Technical Data

| | |
|---|---|
| Laser | |
| Laser Class / High Power | 3R |
| Wavelength | 635 -660nm |
| Output Power / High Power | < 5mW |
| Range | Up to 1000 m |
| Self-levelling range | $\pm 5^\circ$ |
| Levelling precision ^{3,4} | $\pm 1,5$ mm / 30 m |
| Grade accuracy ^{3,4,5} | 0,025 % to 5% Grade |
| Slope X,Y | $\pm 15\%$ |
| Speed | 0 – 1000 RPM, 5-step, counterclockwise/ clockwise rotation in step mode. |
| Mask mode | 90 - 270° and positionable |
| Power supply | NiMH ⁺ 4x 1.2 V, 8Ah or 4x 1.5V alkaline mono-cells |
| Running time rechargeable battery/battery ^{2,3} | ≈ 70 h / 120h |
| Charging time | ≈ 6 h |
| Working temperature | -15 to + 60°C |
| System of protection | IP 67 waterproof |
| Weight | ≈ 3 kg |

| | |
|-----------------------------|-----------------|
| Radio remote control | |
| Range ^{1,2,3} | ≈ 200 m |

- 1) Under optimum atmospheric conditions.
- 2) Under optimum conditions
- 3) At 20°C
- 4) Parallel to the main X, Y axes
- 5) Without lateral slope

17. Supplier Declaration/Safety Information

The device complies with European Directives:
2004/108/EG, RTTE 1999/5/EG sowie 2011/65/EU

Harmonized standards:

EN 60950-1, EN 61000-6-3, EN301489-1, EN300220-1 V2.4.1,
EN 61000-6-2, EN301489-3 und EN300220-2 V2.4.1

A safety information plate is on the left-hand side of the device



An embedded Class 3B laser is installed. This means that when you open the device there is a possibility of entering the range of power values that are higher than Class 3R. Do not point the laser at people. Do not look into the laser beam even with optical instruments.

There are no parts to maintain or adjust inside the device. Servicing may only be carried out by authorized persons.

Safety regulations for THEIS Class 3R HIGH-POWER LASER DEVICES

Users must observe BGVB2 (Accident Prevention Regulations for Laser Radiation in Germany).

- Only trained personnel are allowed to operate this product to avoid radiation with dangerous laser light.
- The laser is subject to Class 3R
- Do not remove the warning signs on the device!
- Observe and secure the beam path over a large distance!
- Never look into the laser beam or shine it into other peoples' eyes! This also applies at a large distance from the device!
- Always set up the laser such that people cannot be shone on at eye level (pay attention to reflections).

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

18. Disposal

The surveying device, its accessories and packaging should be recycled in an environmentally friendly way.



EU countries only:

Never put electrical tools in domestic refuse!

In accordance with EU directive 2012/19/EC concerning Waste Electrical and Electronic Equipment and its transposition into national legislation, measuring equipment that can no longer be used must be collected separately and recycled in an environmentally friendly way. (WEEE - Reg. No. DE 10598800)

Rechargeable batteries:

Never put rechargeable batteries in domestic refuse, a fire or into water. In accordance with Directive 2006/66EC, defective or spent rechargeable batteries must be recycled or disposed of in an environmentally friendly way.

EU countries only:

In accordance with Directive 2006/66EC, non-serviceable THEIS laser devices or spent rechargeable batteries must be recycled or can be returned directly to:

THEIS FEINWERKTECHNIK GMBH

Zum Bolzenbach 26

D- 35236 Breidenbach

☎ + 49 (0) 6465 - 67- 0

📠 + 49 (0) 6465 - 6725

✉ info@theis-feinwerktechnik.de

Laser warning label for **VISION** High Power



Subject to changes



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